

SY09-1012-0

IBM 5255 Display System  
Models 1 and 2  
Maintenance Analysis Procedures

51784  
2501



SY09-1012-0

**IBM 5255 Display System**  
**Models 1 and 2**  
**Maintenance Analysis Procedures**

### **First Edition (August 1980)**

Changes are periodically made to the information herein; before using this publication in connection with the operation of IBM systems, refer to the latest bibliography for your system for the editions that are applicable and current.

Use this publication only for the purpose stated in the *Preface*.

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## PREFACE

These Maintenance Analysis Procedures (MAPs) are to be used for servicing the IBM 5255 Models 1 and 2 Display Stations. Customer engineers using these MAPs should have completed the course on 5250 Display Stations.

It is important that you start your call with the "Start of Call MAP." This, in turn, may lead you to another MAP.

Definitions of terms and abbreviations that are not in the IBM Limited Vocabulary are in the "Glossary of Terms and Abbreviations," section of *IBM 5255 Display Station Model 1, Maintenance Information Manual*, SY09-1011, or *IBM 5255 Display Station Model 2, Maintenance Information Manual*, SY09-1013.

**Note:** MAP pages vi, vii, 0200-6, and 0200-15 have **Caution** or **DANGER** notices. You may translate these notices and write your own words on the blank lines provided on these pages.

### Related Publications

Related information can be found in the following IBM 5250 Information Display System manuals:

- *IBM 5255 Display Station, Parts Catalog*, S131-1003
- *IBM 5250 Information Display System Reference Card*, GX21-9249
- *IBM 5255 Display Station Model 1, Operator's Guide*, GA09-1623
- *IBM 5255 Display Station Model 2, Operator's Guide*, GA09-1626
- *IBM 5251 Models 1 and 11, IBM 5252 Display Station Operator's Guide*, GA21-9248
- *IBM 5255 Display Station Model 1, Maintenance Information Manual*, SY09-1011
- *IBM 5255 Display Station Model 2, Maintenance Information Manual*, SY09-1013
- *IBM 5251 Display Station Models 1 and 11 Maintenance Information Manual*, SY31-0461
- *IBM 5251 Display Station Models 1 and 11 Maintenance Analysis Procedures*, SY31-0571
- *IBM 5252 Dual Display Station Maintenance Information Manual*, SY31-0492
- *IBM 5252 Dual Display Station Maintenance Analysis Procedures*, SY31-0584
- *IBM 5250 Information Display System Planning and Site Preparation Guide*, GA09-1622
- *IBM 5256 Printer Operator's Guide*, GA21-9260
- *IBM 5256 Printer Maintenance Information Manual*, SY31-0462
- *IBM 5256 Printer Maintenance Analysis Procedures*, SY31-0572

## SAFETY

The 5255 Models 1 and 2 have the following specific DANGERS:

- Line voltage is present at the power supply and the display assembly.

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- High voltage can be present at the cathode-ray tube.

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- The cathode-ray tube could implode if it is hit or dropped.

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- The green wire in the display assembly is not at ground voltage.

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## CE SAFETY PRACTICES

All Customer Engineers are expected to take every safety precaution possible and observe the following safety practices while maintaining IBM equipment:

1. You should not work alone under hazardous conditions or around equipment with dangerous voltage. Always advise your manager if you **MUST** work alone.
2. Remove all power, ac and dc, when removing or assembling major components, working in immediate areas of power supplies, performing mechanical inspection of power supplies, or installing changes in machine circuitry.
3. After turning off wall box power switch, lock it in the Off position or tag it with a "Do Not Operate" tag, Form 229-1266. Pull power supply cord whenever possible.
4. When it is absolutely necessary to work on equipment having exposed operating mechanical parts or exposed live electrical circuitry anywhere in the machine, observe the following precautions:
  - a. Another person familiar with power off controls must be in immediate vicinity.
  - b. Do not wear rings, wrist watches, chains, bracelets, or metal cuff links.
  - c. Use only insulated pliers and screwdrivers.
  - d. Keep one hand in pocket.
  - e. When using test instruments, be certain that controls are set correctly and that insulated probes of proper capacity are used.
  - f. Avoid contacting ground potential (metal floor strips, machine frames, etc.). Use suitable rubber mats, purchased locally if necessary.
5. Wear safety glasses when:
  - a. Using a hammer to drive pins, riveting, staking, etc.
  - b. Power or hand drilling, reaming, grinding, etc.
  - c. Using spring hooks, attaching springs.
  - d. Soldering, wire cutting, removing steel bands.
  - e. Cleaning parts with solvents, sprays, cleaners, chemicals, etc.
  - f. Performing any other work that may be hazardous to your eyes. **REMEMBER—THEY ARE YOUR EYES.**
6. Follow special safety instructions when performing specialized tasks, such as handling cathode ray tubes and extremely high voltages. These instructions are outlined in CEMs and the safety portion of the maintenance manuals.
7. Do not use solvents, chemicals, greases, or oils that have not been approved by IBM.
8. Avoid using tools or test equipment that have not been approved by IBM.
9. Replace worn or broken tools and test equipment.
10. Lift by standing or pushing up with stronger leg muscles—this takes strain off back muscles. Do not lift any equipment or parts weighing over 60 pounds.
11. After maintenance, restore all safety devices, such as guards, shields, signs, and grounding wires.
12. Each Customer Engineer is responsible to be certain that no action on his part renders products unsafe or exposes customer personnel to hazards.
13. Place removed machine covers in a safe out-of-the-way place where no one can trip over them.
14. Ensure that all machine covers are in place before returning machine to customer.

15. Always place CE tool kit away from walk areas where no one can trip over it; for example, under desk or table.
16. Avoid touching moving mechanical parts when lubricating, checking for play, etc.
17. When using stroboscope, do not touch **ANYTHING**—it may be moving.
18. Avoid wearing loose clothing that may be caught in machinery. Shirt sleeves must be left buttoned or rolled above the elbow.
19. Ties must be tucked in shirt or have a tie clasp (preferably nonconductive) approximately 3 inches from end. Tie chains are not recommended.
20. Before starting equipment, make certain fellow CEs and customer personnel are not in a hazardous position.
21. Maintain good housekeeping in area of machine while performing and after completing maintenance.

**Knowing safety rules is not enough.**

**An unsafe act will inevitably lead to an accident.**

**Use good judgment—eliminate unsafe acts.**

## ARTIFICIAL RESPIRATION

### General Considerations

1. **Start Immediately—Seconds Count**  
Do not move victim unless absolutely necessary to remove from danger. Do not wait or look for help or stop to loosen clothing, warm the victim, or apply stimulants.
2. **Check Mouth for Obstructions**  
Remove foreign objects. Pull tongue forward.
3. **Loosen Clothing—Keep Victim Warm**  
Take care of these items after victim is breathing by himself or when help is available.
4. **Remain in Position**  
After victim revives, be ready to resume respiration if necessary.
5. **Call a Doctor**  
Have someone summon medical aid.
6. **Don't Give Up**  
Continue without interruption until victim is breathing without help or is certainly dead.

### Rescue Breathing for Adults

1. Place victim on his back immediately.
2. Clear throat of water, food, or foreign matter.
3. Tilt head back to open air passage.
4. Lift jaw up to keep tongue out of air passage.
5. Pinch nostrils to prevent air leakage when you blow.
6. Blow until you see chest rise.
7. Remove your lips and allow lungs to empty.
8. Listen for snoring and gurglings—signs of throat obstruction.
9. Repeat mouth to mouth breathing 10-20 times a minute. Continue rescue breathing until victim breathes for himself.



Thumb and finger positions



Final mouth-to-mouth position

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## MAP INTRODUCTION

### MAP FORMAT

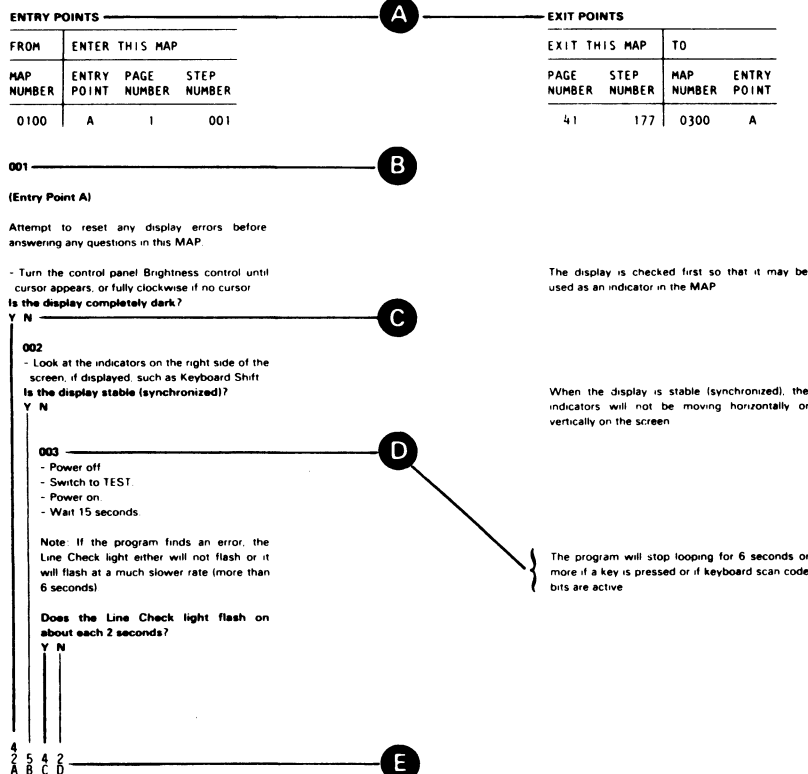
The MAPs ask questions about symptoms; questions concerning the most important symptoms are asked first. These questions isolate the possible causes of machine failures and point you to the part of the display station that needs adjustment or replacement.

The MAPs guide you through the service call, using step-by-step procedures that have you follow a path when you respond to questions or when you leave or enter a page.

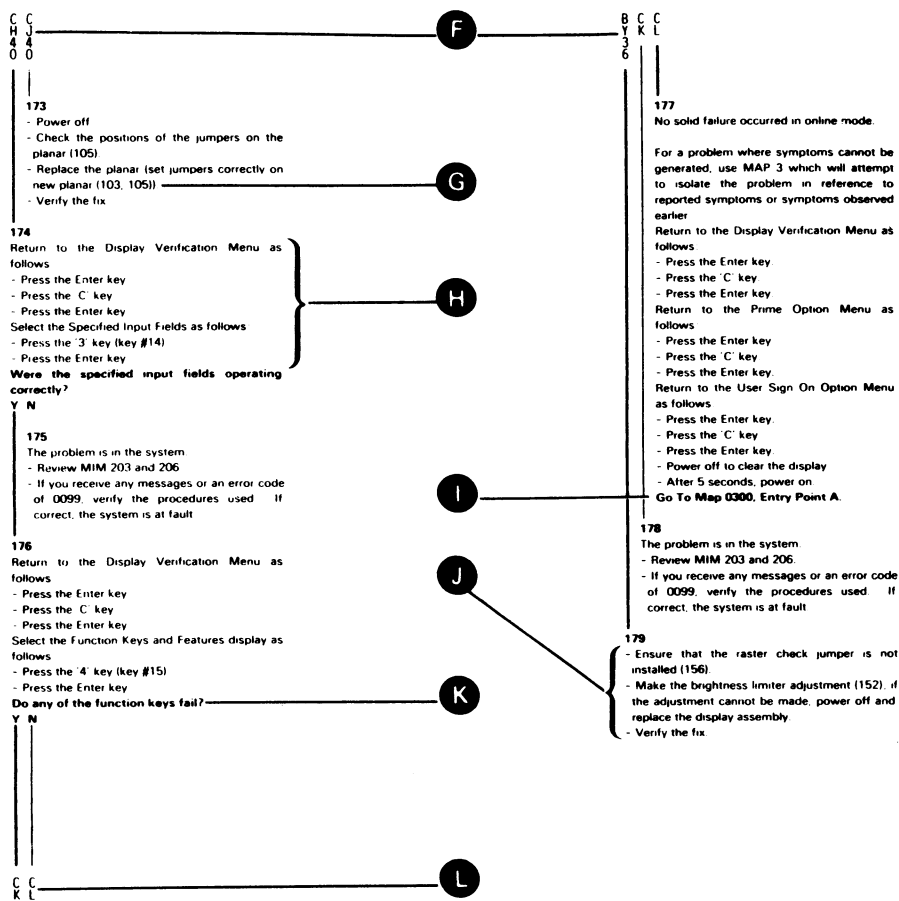
### MAP EXAMPLE

#### MAP 2

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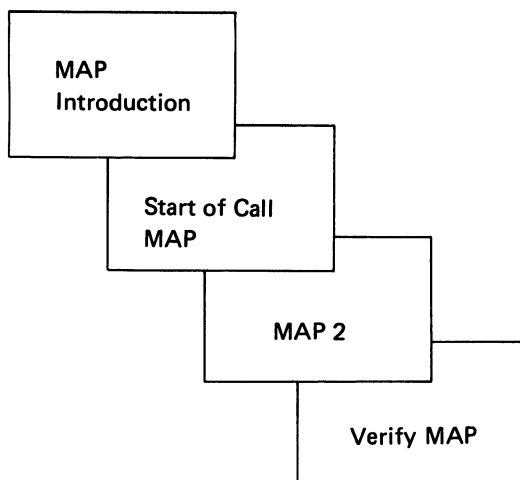


- A** The *Entry Points* and *Exit Points* tables list all entry and exit points to and from this MAP.
- B** Step number.
- C** Y = yes; N = no.
- D** Statements that provide additional information about a step.
- E** Off-page references identify the page and trace where a MAP leg continues.



- F** Off-page references indicate the trace and page where a MAP leg came from.
- G** Reference numbers refer to a location graphic, maintenance procedure, chart, and other pertinent information in the MIM.
- H** Instructions establish conditions for answering the next question.
- I** Exit instructions indicate the MAP and entry point to go to.
- J** Commands state the possible fixes for the failure. Replace, repair, or adjust in the order given.
- K** Questions are to be answered either yes or no. Continue from your answer to the next question or instruction.
- L** On-page referencing indicates the trace on the same page where this MAP leg continues.

## 5255 MAPs



### Start of Call MAP

The Start of Call MAP is the starting point for each service call. This MAP contains a symptom index, which is a list of single symptoms that are grouped by major units. These single symptoms lead directly to a repair action in the MIM. If the symptom you encounter is not in the symptom index, you are led to MAP 2.

### MAP 2

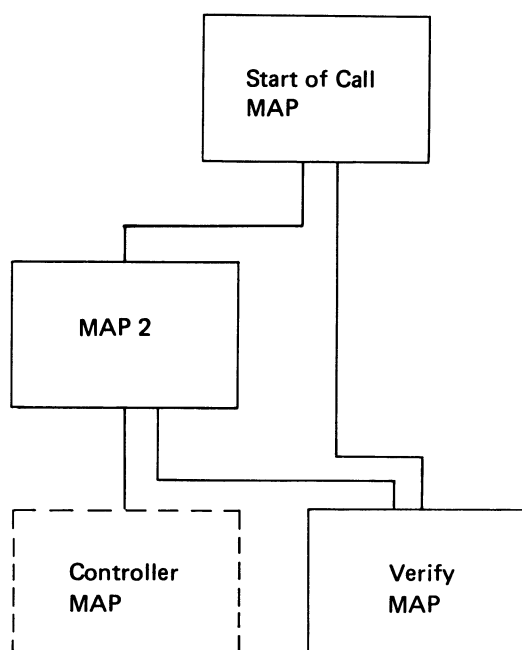
MAP 2 uses several symptoms to lead to a repair action. This MAP uses one symptom at a time. The most important and least complex symptom is used first.

### Verify MAP

The Verify MAP is used after a repair action has been made; it ensures that the display station operates correctly.

### MAP FLOW

The following chart shows the normal path to follow to isolate a failure:



**Note:** The Controller MAP is located in the controller documentation.

## USING THE MAPs

When using the MAPs, you must:

**READ CAREFULLY.** The MAPs can aid you in finding the failure only if you follow instructions and answer questions accurately.

**FOLLOW THE SEQUENCE.** Always do the procedure one step at a time.

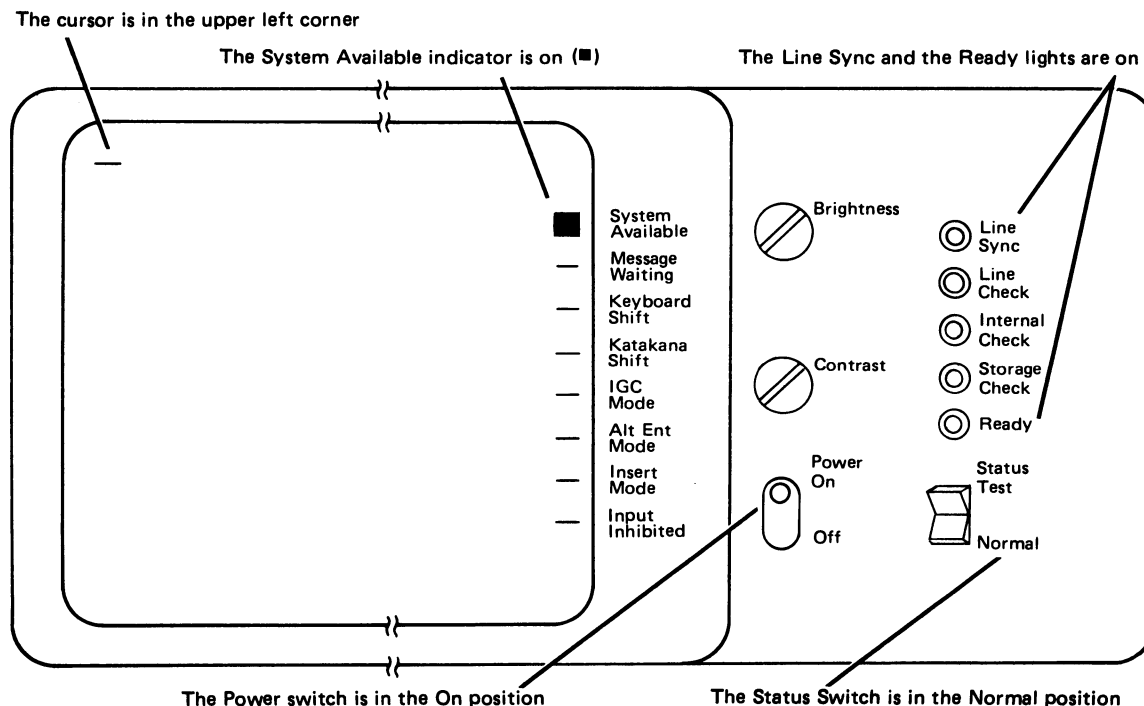
**READ THE COMMENTS.** Some steps have additional information that pertains to them. This information, which is located to the right of the step, describes why questions or actions are needed to determine the correct failing part.

**FOLLOW THE INSTRUCTIONS.** Instructions must be carried out exactly and in the order given. Questions rely on conditions prepared by the instructions immediately before the questions.

## NORMAL CONDITIONS AFTER POWER ON

The following illustration shows the normal conditions of the display station after power on.

**Note:** When a key is pressed, the clicker operates, and the characters are displayed.





## IBM 5255 DISPLAY STATION

### START OF CALL MAP

PAGE 1 OF 4

#### ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0000	A	2	001

#### EXIT POINTS

EXIT THIS MAP		TO	
PAGE NUMBER	STEP NUMBER	MAP NUMBER	ENTRY POINT
4	002	0200	A

001

#### Start of Call

Before starting to diagnose any failure, power the display station down, open the covers, and **inspect all crossovers and cables** to ensure good electrical connection of signal and voltage lines. If a planar has been replaced, **ensure that all cables are plugged into the correct planar socket**. Check that the keyboard cable and the control panel/station address cable are not plugged into each other's planar socket. (MIM 103)

Refer to MIM 105 and temporarily install a jumper on the stop-on-storage-check pins on Planar #1. **This jumper must be removed on completion of the call.**

When more than one FRU replacement appears in a fix, **a single failing FRU should be isolated** by replacement in the order listed.

For definitions of terms and abbreviations used in these MAPs, see the glossary in the *5255 Maintenance Information Manual*.

DISPLAY STATION COVER OPEN/CLOSE—MIM 108  
KEYBOARD COVER REMOVAL AND REPLACEMENT—MIM 109.

(Step 001 continues)

## IBM 5255 DISPLAY STATION

## MAP 1

PAGE 2 OF 4

(Step 001 continued)

**(Entry Point A)**

## SYMPTOM INDEX

Symptom	Comments	Repair Action
***** * D I S P L A Y *****		
Characters missing only in the corners		Yoke adj and centering (MIM 154,155)
Display changes size	Display is stable	Replace the display assembly (MIM 151)
Display lines missing	Some lines are correctly displayed	Replace Planar #1 (MIM 103, 105)
First display line missing only	All other lines displayed correctly	Replace Planar #1 (MIM 103, 105)
Lines not straight	Display is stable	Replace the display assembly (MIM 151)
Out of focus	Display is stable (Ensure brightness cntl is not fully clockwise)	Replace the display assembly (MIM 151)
One horizontal line is displayed	Line may be solid or broken	Replace the display assembly (MIM 151)
One vertical line is displayed	Line may be solid or broken	Replace the display assembly (MIM 151)
Incorrectly formed alphanumeric characters	The same character fails in any screen location but only in alphanumeric mode	Replace Planar #1 (MIM 103, 105)

(Step 001 continues)

# IBM 5255 DISPLAY STATION

## MAP 1

PAGE 3 OF 4

(Step 001 continued)

Incorrectly formed ideographic characters	The same character fails in any screen location but only in ideographic mode	Replace Planar #2 (MIM 103)
Incorrectly formed characters in all modes	Characters fail in any screen location but display station functions normally	Replace Planar #1 Replace Planar #2 (MIM 103, 105)
Tilted display		MIM 154
*****		
* KEY LOCK *		
*****		
Display station operates with key-lock set	Machine still operates	MIM 114
*****		
* POWER SUPPLY *		
*****		
Reverse Image Raster	Line Sync, Line Check, and Ready lights are on	Check -5 Vdc and fuse F3 (MIM 180) If the -5 Vdc is low or missing, replace the power supply (MIM 181). If not, GO TO MAP 0200, Entry Point A.
Blank Display	Dead keyboard and Ready light on	
Blank Display	Only Internal Check light and Ready light on	
Cursor at E (MIM 210)	Only Ready light on.	
Cursor at E (MIM 210)	Ready light on and System Available	Replace the power supply fan (MIM 187)
Noisy power supply fan	Runs OK but noisy	



IBM 5255 DISPLAY STATION  
MAP 1  
PAGE 4 OF 4

(Step 001 continued)

*****		
* O T H E R *		
*****		
Always in Test status	The diagnostic continues to loop about each 3 seconds after power-on in <b>Normal</b> status. The System Available indicator is off.	MIM 111

**Note:** The above indications are **not** covered in MAP 2.

Did you find the indication in the Symptom Index?

Y N

002

Go To Map 0200, Entry Point A.

003

- Perform the referenced repair action.
- Verify the fix.

# IBM 5255 DISPLAY STATION

## MAP 2

PAGE 1 OF 16

### ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0100	A	1	001

001

(Entry Point A)

Is the Magnetic Stripe Reader or Extended Character  
Expansion feature installed on this display station  
(MIM 103)?

Y N

002

Does the ready lamp remain on?

Y N

003

Does the ready lamp remain off?

Y N

004

Observe the System Available indicator for 15  
seconds.

Does it turn on and then off again?

Y N

005

- Replace Planar #1. Set jumpers correctly  
on new planar (MIM 103, 105).
- Verify the fix.

006

- Ensure that this display station does not have  
the same address as another station on the line.
- Use MIM 175.
- Verify the fix.

Answer this question YES if the Ready lamp does not  
come on and remain on. Do not include the 2 second  
lamp test flash during power on.

1

5 4 2

A B C

**C**  
**1**  
**IBM 5255 DISPLAY STATION**  
**MAP 2**  
**PAGE 2 OF 16**

**007**

**Is the screen completely blank?**

**Y N**

**008**

**Is the cursor at position A?**

**Y N**

Refer to MIM 210 for a description of cursor positions.

**009**

**Is the cursor at position B?**

**Y N**

**010**

**Is the cursor at position C?**

**Y N**

**011**

**Is the Line Check lamp flashing every 2 seconds (approximately)?**

**Y N**

**012**

- Use MIM 188 (**Power**) to isolate the failure.
- Verify the fix.

**013**

- Use MIM 111 (**Address Switches**) to isolate the failure.
- Verify the fix.

**014**

- Unplug the internal keyboard cable at 01-B.
- Power down.
- Wait 15 seconds.
- Power up.

**Are power-on conditions normal now?**

**Y N**

**3 3 3 3 3**  
**D E F G H**

D E F G H IBM 5255 DISPLAY STATION

2 2 2 2 2 MAP 2

PAGE 3 OF 16

015

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

016

- Use MIM 138 (Keyboard Voltage and Strobe) to isolate the failure.
- Verify the fix.

017

Verify that the station address switches are set to a valid station address. Check that voltage levels are correct at planar end of cable (MIM 111). (111 is not a valid station address.)

Is the Station Address OK?

Y N

018

- Set switches to correct station address or repair switches/cable.
- Verify the fix.

019

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

020

- Use MIM 120 (Extended Display Character RAM) to isolate the failure.
- Verify the fix.

021

Is the Internal Check or Storage Check LED on?

Y N

022

- Use MIM 188 (Power) to isolate the failure.
- Verify the fix.

4  
J

The station address displayed in the station address field is incorrect under these conditions. Visually inspect the address switches and probe signal line voltage levels.

## B J IBM 5255 DISPLAY STATION

1 3

## MAP 2

PAGE 4 OF 16

023

Internal Check?

Y N

024

- Storage Check.
- Observe the check LED on Planar #2 (and Planar #3 if installed). Note which one is on.
- Power down, inspect and reseal all crossovers between Planar #1, Planar #2, and Planar #3 (if installed) to ensure good electrical connection.

Are the crossovers OK?

Y N

025

- Correct the crossover failure.
- Verify the fix.

026

- Replace the planar that had the check LED on.
- Verify the fix.

027

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

028

Is the display stable (synchronized)? (See Note.)

Y N

029

- Use MIM 157 (Display Assembly Cable) to isolate the failure.
- Verify the fix.

When the Storage Check LED is on, a check LED on Planar #2 (or Planar #3 if installed) will also be turned on (MIM 103).

**Note:** When the display is stable (synchronized), display screen indicators, characters, or cursor will not be moving horizontally or vertically on the display. If the display is completely blank, answer this question yes.

K  
4

# IBM 5255 DISPLAY STATION

## MAP 2

PAGE 5 OF 16

030

Inspect screen for following symptoms:

- Display not centered
- Display tilted
- Display size incorrect
- Characters missing in display corners
- Display out of focus (fuzzy)
- Illuminated raster

Did you find the problem in the above list?

Y N

031

Is the System Available indicator on?

Y N

032

Is the cursor at position E?

Y N

Refer to MIM 210 for a description of cursor positions.

033

Is the Line Check LED on?

Y N

034

Open the work station cover and observe the CRT filament.

Is the CRT filament on?

Y N

1

5 7 7 6 6 6  
L M N P Q R

P Q R  
5 5 5**IBM 5255 DISPLAY STATION****MAP 2**

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**035****DANGER**

If you are not careful, you could receive an electrical shock while performing the next procedures.

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- Verify correct ac distribution to the display assembly (MIM 150, 183, 184).

**Is 120 V present?****Y N****036**

- Replace the power supply (MIM 180, 183).
- Verify the fix.

**037**

- Refer to MIM 150.
- Power down.
- Check the display assembly fuse.
- If fuse is good, replace the display assembly.
- Verify the fix.

**038**

- Use MIM 157 (Display Assembly Cable) to isolate the failure.
- Verify the fix.

**039**

- Use MIM 188 (Power) to isolate the failure.
- Verify the fix.

M N  
5 5

## IBM 5255 DISPLAY STATION

### MAP 2

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#### 040

- Power down.
- Set Status switch to Test.
- Power up. Wait 15 seconds.

Does the displayed address field show the correct address switch setting for this display station?

Y N

#### 041

- Ensure that the address switches are set correctly for this display station (MIM Appendix A).
- Use MIM 110, 111 (Address Switches) to isolate the failure.
- Verify the fix.

#### 042

- Use MIM 175 (System Cable) to isolate the failure.
- Verify the fix.

#### 043

Does the cursor remain at position F (free-key mode), or is a menu displayed (host process or running)?

Y N

#### 044

Is any character repeating on the screen with no key depressed?

Y N

#### 045

Turn the Brightness control clockwise until any characters present are displayed.

Is a single cursor displayed?

Y N

8 8 8 8  
S T U V

Refer to MIM 210 for a description of the displayed address fields and MIM 111 for address switch settings.

Refer to MIM 210 for a description of the cursor positions.

Answer YES only for characters; do not include blanks as characters.

The cursor may be moving, but is only a single cursor displayed?



S T U V  
7 7 7 7

**IBM 5255 DISPLAY STATION**  
**MAP 2**

PAGE 8 OF 16

**046**

Is the Keylock feature installed on this display station?

Y N

**047**

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

**048**

- Use MIM 114 (Keylock) to isolate the failure.
- Verify the fix.

**049**

Is it at position E?

Y N

**050**

- The keyboard pad PC board or logic PC board is failing.
- Inspect and clean the pad PC board or replace the logic PC board.
- Verify the fix.

**051**

- Use MIM 204 (Diagnostic Aids) to isolate the failure.
- Verify the fix.

**052**

- Clean or replace failing key module and/or pad PC board. Refer to MIM 132 and MIM 133.
- Verify the fix.

**053**

Is the cursor width normal for A/N mode?

Y N

Normal cursor width in A/N mode is same width as the display screen indicators.

9 9  
W X

W X  
8 8

## IBM 5255 DISPLAY STATION

### MAP 2

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#### 054

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

#### 055

Exercise keyboard alphanumeric character keys in A/N mode. Check that mode indicators are set when mode keys are depressed. Check that only one character is displayed per key operation (or key combination in ideographic mode). Enter ideographic key combinations in ideographic mode. Enter alternate entry number sequences in alternate entry mode.

If an alphanumeric keyboard is attached, exercise only the alphanumeric data keys.

Do all character keys entered display characters correctly and do all mode change keys cause a mode change correctly?

Y N

#### 056

Does only one key fail?

Y N

#### 057

- Power down.
- Set Status switch to Test.
- Power up. Wait 15 seconds.

Are any test mode data fields displayed on the screen?

Y N

#### 058

- Power down.
- Inspect and reseal all crossover connectors to ensure good electrical connections.

Are the connections OK?

Y N

#### 059

- Correct the crossover failure.
- Verify the fix.

In free-key mode, characters are displayed using a field attribute of hex '20' (Normal Display). If any characters are not displayed normally (for example, if they are reverse image, high intensity, or have column separators), the characters are not correct.

Answer NO if failure is a two-key ideographic combination.

Refer to MIM 210 for a description of the test mode data fields.

1 1 1 1  
1 1 0 0  
2 2 A A  
Y Z A B

## A A IBM 5255 DISPLAY STATION

## A B MAP 2

9 9 PAGE 10 OF 16

## 060

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Replace Planar #2 (MIM 103).
- Verify the fix.

## 061

Is the displayed keyboard ID correct for the attached keyboard type (MIM 210)?

Y N

## 062

Does the keyboard appear to be completely inoperative? (No key entry, no clicker.)

Y N

## 063

- Use MIM 136 (Keyboard ID) to isolate the failure.

## 064

- Use MIM 138 (Keyboard Voltage and Strobe) to isolate the failure.
- Verify the fix.

## 065

- Try several keys to ensure that a failing key was not selected.
- Observe the displayed scan code field and the break code/keyboard ID field as the keys are depressed.

Do all scan code bits and the break code bit change at least once?

Y N

## 066

Do any bits in the scan code field change?

Y N

1 1 1  
1 1 1  
A A A  
C D E

This test checks for an open or grounded scan code line and break code line. If an alphanumeric typewriter keyboard is attached, the break code is bit 0 of the scan code field. When answering this question, regard the break code bit as a scan code bit. (This bit should be zero when a key is depressed and one when the key is released.)

A A A      **IBM 5255 DISPLAY STATION**

C D E      **MAP 2**

1 1 1  
0 0 0      PAGE 11 OF 16

**067**

- Use MIM 138 (**Keyboard Voltage and Strobe**) to isolate the failure.
- Verify the fix.

**068**

- Use MIM 137 (**Keyboard Scan Code**) to isolate the failure.
- Verify the fix.

**069**

Do any keys fail to change the displayed scan code bits?

Y N

**070**

Are the displayed scan code bits and the break code bit correct for each key pressed (MIM 143, 144)?

Y N

**071**

- Use MIM 137 (**Keyboard Scan Code**) to isolate the failure.
- Verify the fix.

**072**

Did the failure occur only while in alphanumeric mode?

Y N

**073**

Did the failure occur only while in ideographic or alternate entry mode?

Y N

**074**

- Use MIM 175 (**System Cable**) to isolate the failure.
- Verify the fix.

1 1 1  
2 2 2  
A A A  
F G H

Y Z A A A IBM 5255 DISPLAY STATION

9 9 F G H MAP 2

1 1 1 1 1 PAGE 12 OF 16

075

- Replace Planar #2 (MIM 103).
- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

076

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Replace Planar #2 (MIM 103).
- Verify the fix.

077

- Inspect and clean pad PC board or replace the logic PC board.
- Verify the fix.

078

- Inspect and clean the pad PC board or replace the logic PC board.
- Verify the fix.

079

- Power down.
- Set Status switch to Test.
- Power up.
- Exercise function keys.

Do function keys cause the displayed scan code bits to change?

Y N

080

Were the three fields (scan code, keyboard ID, and station address) displayed correctly for any of the entered keys?

Y N

081

Is the station address field correct?

Y N

1 1 1 1  
4 3 3 3  
A A A A  
J K L M

Function keys are all keys that are not character keys (cursor movement, space, etc.).

A A A  
K L M  
1 1 1  
2 2 2

## IBM 5255 DISPLAY STATION

### MAP 2

PAGE 13 OF 16

#### 082

- Use MIM 111 (**Address Switches**) to isolate the failure.
- Verify the fix.

#### 083

- Replace Planar #1. Set jumpers correctly on new planar (MIM 103, 105).
- Verify the fix.

#### 084

- Set mode switch to Normal.
- One at a time, press and hold several typamatic keys.
- Look for character or function to repeat.

Do all of the keys entered fail to repeat?

Y N

#### 085

Does any cursor movement key (cursor up, cursor down, cursor right, cursor left) fail to move the cursor?

Y N

#### 086

- Clean the pad PC board contacts.
- Replace keyboard logic PC board.
- Verify the fix.

#### 087

- Use MIM 137 (**Keyboard Scan Code**) to isolate the failure.
- Verify the fix.

#### 088

- Clean the keyboard pad PC board contacts.
- Replace keyboard logic PC board.
- Verify the fix.

On an alphanumeric typewriter keyboard, any gray data key may be used for this test. On an ideographic keyboard, only the keys in the two bottom rows of the function pad (black keys) are typamatic.

## A IBM 5255 DISPLAY STATION

## J MAP 2

1  
2 PAGE 14 OF 16

089

Allow internal diagnostics to loop in Test mode. (Do not use keys.)

Does the keyboard clicker 'click' as the internal diagnostics loop in Test mode?

Y N

090

- Use MIM 139 (Clicker) to isolate the failure.
- Verify the fix.

091

- Power down.
- Set Status switch to Normal.
- Power up. Wait 15 seconds.
- Observe the LED indicators during power-on.

Did all LED indicators come on for approximately 2 seconds?

Y N

092

- Use MIM 111 (Address Switches) to isolate the failure.
- Verify the fix.

093

Refer to MIM 206.

- Execute the online function tests.
- Check display for correct operation of all tests.

Did the online function tests execute correctly?

Y N

1 1  
5 5  
A A  
N P

A L A A IBM 5255 DISPLAY STATION

1 5 N P MAP 2

1 1  
4 4 PAGE 15 OF 16

094

Refer to the appropriate MIM section and perform necessary corrective action.

AREA-OF-FAILURE MIM SECTION

Brightness	152, 111
Contrast	152, 111
Attributes	202
Raster	156

– Verify the fix.

095

– No trouble found.  
– Display station is operating correctly.

096

– Use MIM 153, 154, 155 or 156 to adjust display.  
– If adjustment cannot be made, replace the display assembly.  
– Verify the fix.

097

Does the display station (including the keyboard) function correctly except for the feature?

Y N

098

– Power down.  
– Remove the feature(s) electrically by disconnecting the feature card(s) from their crossover connection to base machine logic (MIM 103).  
– Power up and retry the failing operation.

Does the work station function correctly now?

Y N

099

Return to 0200-1. Continue as with a display station without features.

This procedure isolates a failure caused indirectly by a feature card.

CAUTION: Use care in the removal of feature card(s) to ensure that base machine connections are not disturbed. If the Extended Display Character Expansion Feature (Planar #3) is removed, temporarily move jumper on Planar #1 from position 2B to 2A (MIM 105).

---

---

---

1 1

6 6

A A

Q R



A A IBM 5255 DISPLAY STATION

Q R MAP 2

1 1  
5 5 PAGE 16 OF 16

100

- Power down.
- Reconnect each feature card one at a time.
- After each card is reconnected, power up and retry the failing operation.

Does the work station function correctly now?

Y N

101

- Replace the feature card.
- Verify the fix.

102

Failure was caused by bad crossover connection.

103

Refer to appropriate feature mini-MAP:

Magnetic Stripe Reader—MIM 115-119

Extended Display Character Expansion feature—MIM 121

# IBM 5255 DISPLAY STATION

## Verify MAP

PAGE 1 OF 1

### ENTRY POINTS

FROM	ENTER THIS MAP		
MAP NUMBER	ENTRY POINT	PAGE NUMBER	STEP NUMBER
0200	A	1	001

001

(Entry Point A)

- Attempt to repeat the original error.
- Verify that no new errors have occurred.
- Power down.
- Switch to Normal.
- After 5 seconds, power up.

Is the cursor at position F?

Y N

002

Is the controller available?

Y N

003

Is the cursor at position E (upper right)?

Y N

004

Go to MAP 0100, entry point A (Start of Call)  
and use the symptom you have now.

005

- Remove the stop-on-storage-check jumper  
from Planar #1 if installed at start of call.
- End of call.

006

Go to MAP 0100, entry point A (Start of Call) and  
use the symptom you have now.

A

007

- Run the on-line test (Display Attribute Test—MIM 206).

Does the display attribute test execute correctly?

Y N

008

Go to MAP 0100, entry point A (Start of Call) and  
use the symptom you have now.

009

- If necessary, run the customer application.
- If not necessary, answer YES to the following question.

Does the customer application function correctly now?

Y N

010

— If necessary, check the customer application.  
Go to MAP 0100, entry point A (Start of Call) and  
use the symptom you have now.

011

- Remove the stop-on-storage-check jumper from  
Planar #1 if installed at start of call.
- End of Call.

A



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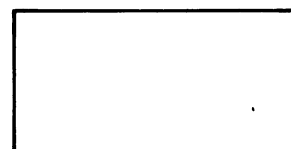
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**International Business Machines Corporation**

**General Systems Division  
4111 Northside Parkway N.W.  
P.O. Box 2150  
Atlanta, Georgia 30301  
(U.S.A. only)**

**General Business Group/International  
44 South Broadway  
White Plains, New York 10601  
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